(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREAT

## (19) World Intellectual Property **Organization**

International Bureau



## I <u>regia dinarda in erene sten audia eran</u> eren in dia erene isler bilera indi letan eran erene isler irek irek

## (43) International Publication Date 11 March 2004 (11.03.2004)

## PCT

# (10) International Publication Number

(51) International Patent Classification7:

H01J 29/07

WO 2004/021388 A1

- (21) International Application Number:
  - PCT/IB2003/003715
- (22) International Filing Date:
  - 31 July 2003 (31.07.2003)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

02078533.3

28 August 2002 (28.08.2002) EP

- (71) Applicant (for all designated States except US): KONIN-KLLIKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): HUYSMANS, Ludovic, P., W. [BE/BE]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). SIMKENS, Franciscus, H., J. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (74) Agent: DEGUELLE, Wilhelmus, H., G.; Philips Intellectual Property & Standards, Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

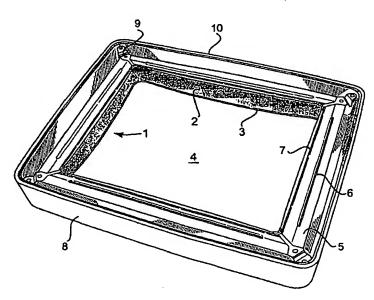
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

### Declaration under Rule 4.17:

as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,

[Continued on next page]

### (54) Title: FRAME SECTION FOR A CATHODE RAY TUBE



(57) Abstract: The present invention relates to a frame section (1) and a method for uncoupling at least a part of a reinforcing flange (5) from the rest of the frame section, a shadow mask frame and a shadow mask (4) in a cathode ray tube. The shadow mask frame is composed of at least four frame sections arranged in a hollow, generally rectangular shape, and each frame section includes two flange portions (2, 5) of a thin-walled material arranged at an angle to each other. A first flange portion serves as a mask mounting flange (2) the width of which extends generally in parallel with the cathode rays, and a second flange portion serves as a reinforcing flange (5) whose width extends generally perpendicularly to the cathode rays. According to the invention, a through-slit (6) is formed in the longitudinal direction of the frame section.

## WO 2004/021388 A1



MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

### Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

PCT/16 U3/03715

# A. CLASSIFICATION OF SUBJECT MATTER IPC 7 H01J29/07

According to International Patent Classification (IPC) or to both national classification and IPC

#### **B. FIELDS SEARCHED**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

PAJ, EPO-Internal, WPI Data

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 08, 5 August 2002 (2002-08-05) -& JP 2002 100300 A (SONY CORP), 5 April 2002 (2002-04-05)	1-4,7-9
Y	the whole document abstract; figures 5,4,12 paragraphs '0019!,'0021!,'0025!; figure 7	5,6
X	WO 02 01594 A (KONINKL PHILIPS ELECTRONICS NV) 3 January 2002 (2002-01-03)	1,6-9
Y	abstract; claims 1-3; figures 4,5	6
Y	WO 02 09138 A (KONINKL PHILIPS ELECTRONICS NV) 31 January 2002 (2002-01-31) abstract page 6, line 30 -page 7, line 15; figures 3,4	5
χFu	ther documents are listed in the continuation of box C.    X   Patent family members are listed	in annex.
"A" docur	rategories of cited documents:  "T" later document published after the integration of priority date and not in conflict with cited to understand the principle or the integration of particular relevance of document but published on or after the international date  "T" later document published after the international of particular relevance; the document of particular relevance; the cannot be considered novel or cannot be co	the application but early underlying the claimed invention

<ul> <li>Special categories of cited documents:</li> <li>"A" document defining the general state of the art which is not considered to be of particular relevance</li> <li>"E" earlier document but published on or after the international filing date</li> <li>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</li> <li>"O" document referring to an oral disclosure, use, exhibition or other means</li> <li>"P" document published prior to the international filing date but later than the priority date claimed</li> </ul>	<ul> <li>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</li> <li>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</li> <li>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</li> <li>*&amp;* document member of the same patent family</li> </ul>
Date of the actual completion of the international search 4 December 2003	Date of mailing of the international search report  15/12/2003
Name and mailing address of the ISA  European Patent Office, P.B. 5818 Patentlaan 2  NL – 2280 HV Rijswijk  Tel. (+31–70) 340–2040, Tx. 31 651 epo nl,  Fax: (+31–70) 340–3016	Authorized officer  Meyer, J

## INTERNATIONAL PARCH REPORT

Internation No
PCT/IB 03/03715

	ntion) DOCUMENTS CONSIDERED TO BE RELEVANT	Deleverado el la Ne		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
A	US 4 333 034 A (TSUKAMURA YOSHIHIRO ET AL) 1 June 1982 (1982-06-01) the whole document column 7, line 7-28; figure 7	1		
A	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 05, 3 May 2002 (2002-05-03) -& JP 2002 008554 A (SONY CORP), 11 January 2002 (2002-01-11) abstract; figures 2,5	1		

# INTERNATIONAL ARCH REPORT

Internation cation No
PCT/IB 03/03715

				1 '	1 01/10 03/03/13	
Patent document cited in search report		Publication date		Patent family member(s)		Publication date
JP 2002100300	Α	05-04-2002	NONE			
WO 0201594	Α	03-01-2002	CN	1383574	T	04-12-2002
			WO	0201594	A1	03-01-2002
			EP		A1	02-04-2003
			TW	503426		21-09-2002
			US	2001054864	A1	27-12-2001
WO 0209138	A	31-01-2002	CN		T	18-12-2002
			MO	0209138		31-01-2002
			EP	1204983		15-05-2002
			TW	503427		21-09-2002
			US	2002021072	A1	21-02-2002
US 4333034	A	01-06-1982	JP	1287795	С	31-10-1985
			JP	55139743		31-10-1980
			JP	60006066		15-02-1985
			AU	540635		29-11-1984
			AU	5744180		23-10-1980
			CA	1149438		05-07-1983
			DE	3014428		30-10-1980
			FR	2454695		14-11-1980
			GB	2048730		17-12-1980
			NL 	8002243	А,В, 	21-10-1980 
JP 2002008554	Α	11-01-2002	NONE			